FIG. 1

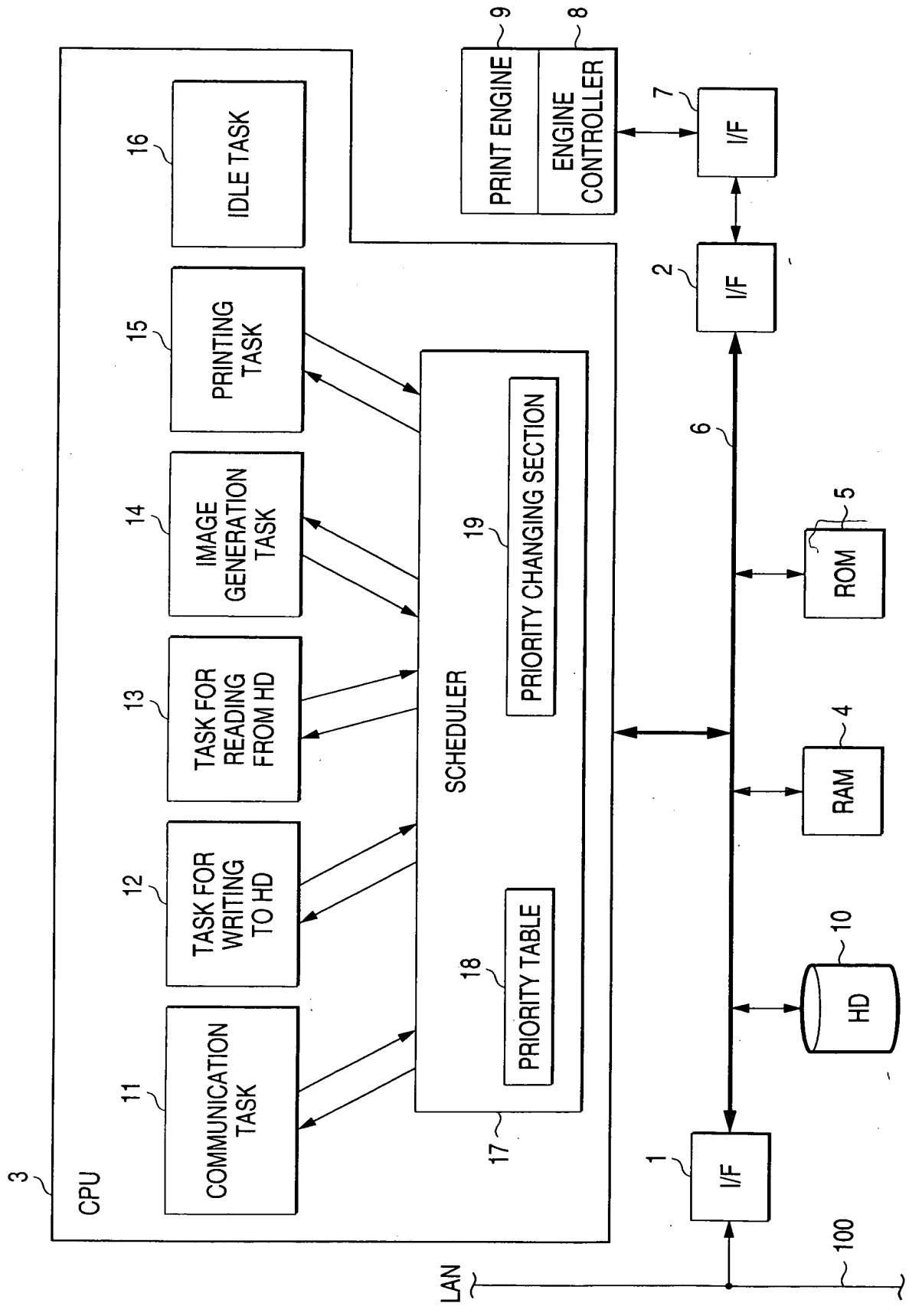
3
CPU
11
COMMUNICATION TASK
12
TASK FOR WRITING TO HD
13
TASK FOR READING FROM HD
14
IMAGE GENERATION TASK
15
PRINTING TASK
16
IDLE TASK
17
SCHEDULER
18
PRIORITY TABLE
19
PRIORITY CHANGING SECTION
9
PRINT ENGINE
8
ENGINE CONTROLLER
7
I/F
2
I/F
6
5
ROM
4
RAM
10
HD
1
I/F
LAN
100

FIG. 2

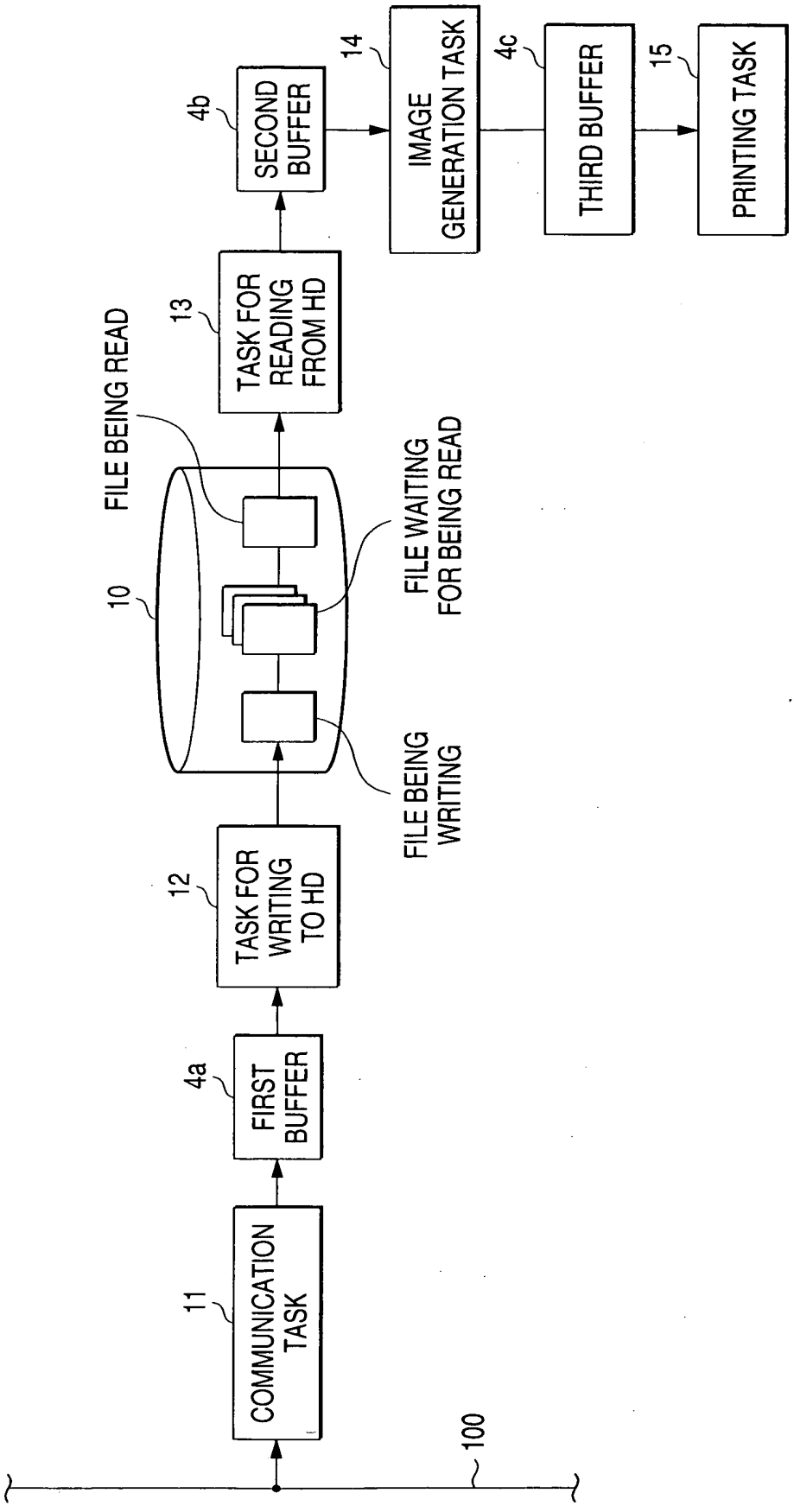
100
11
COMMUNICATION TASK
4a
FIRST BUFFER
12
TASK FOR WRITING TO HD
10
FILE BEING WRITING
FILE WAITING FOR BEING READ
FILE BEING READ
13
TASK FOR READING FROM HD
4b
SECOND BUFFER
14
IMAGE GENERATION TASK
4c
THIRD BUFFER
15
PRINTING TASK

FIG. 3

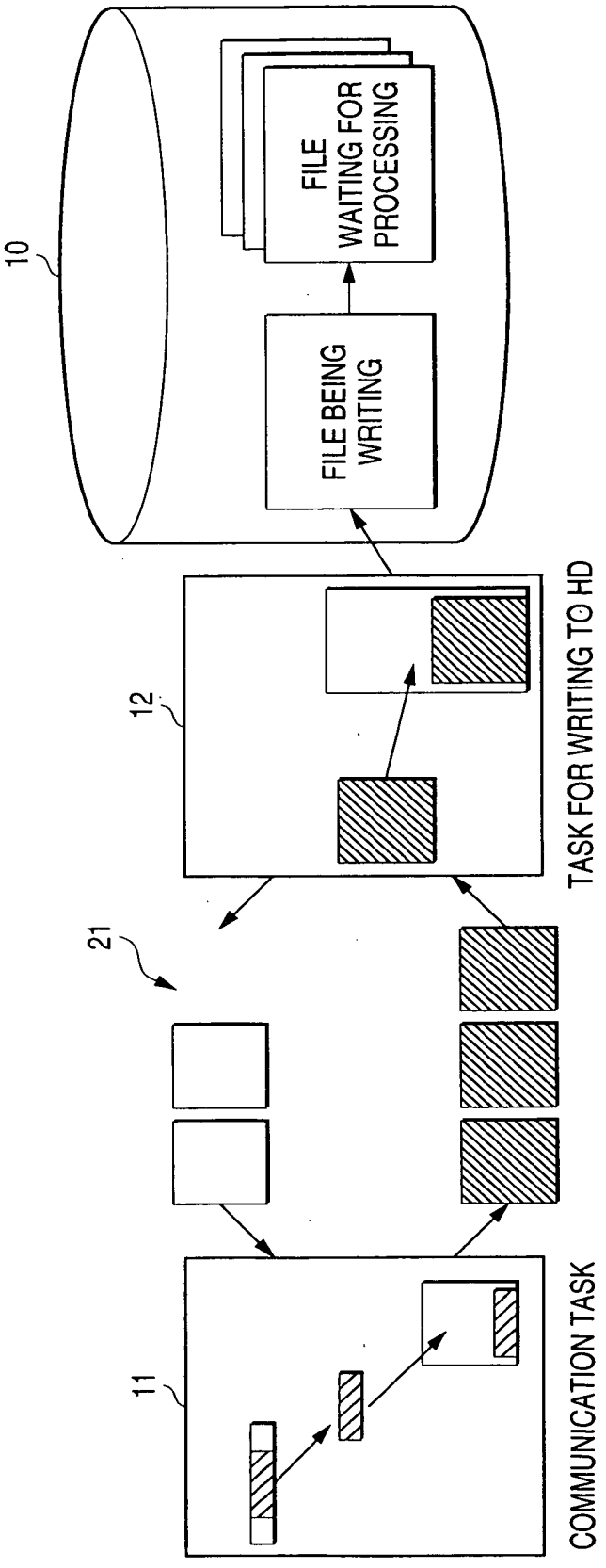
10
FILE WAITING FOR PROCESSING
FILE BEING WRITING
12
TASK FOR WRITING TO HD
21
11
COMMUNICATION TASK

FIG. 4

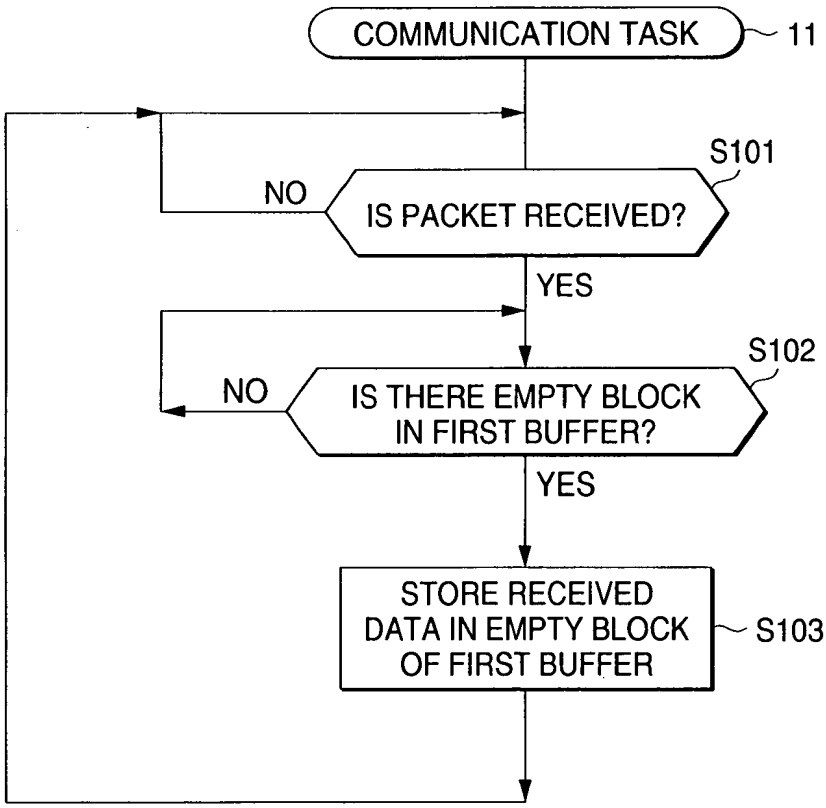
COMMUNICATION TASK
11
S101
NO
IS PACKET RECEIVED?
YES
S102
NO
IS THERE EMPTY BLOCK IN FIRST BUFFER?
YES
STORE RECEIVED DATA IN EMPTY BLOCK OF FIRST BUFFER
S103

FIG. 5

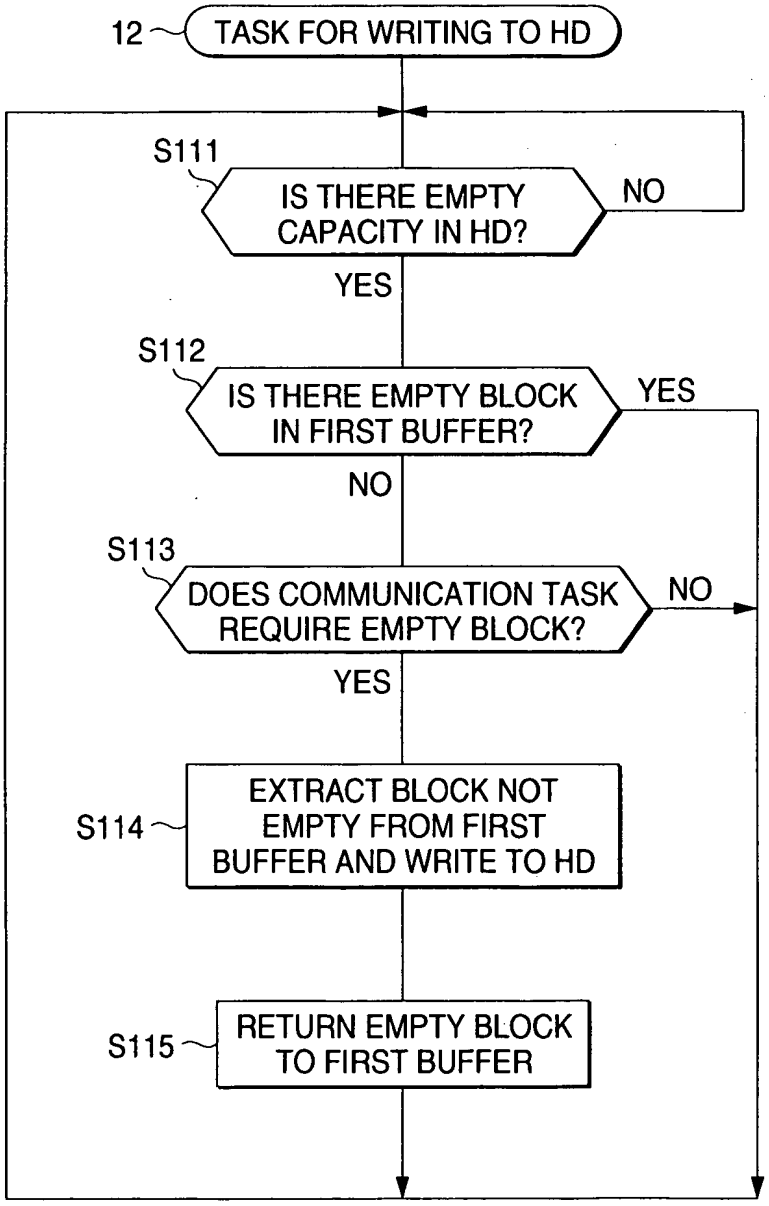
12
TASK FOR WRITING TO HD
S111
IS THERE EMPTY CAPACITY IN HD?
NO
YES
S112
IS THERE EMPTY BLOCK IN FIRST BUFFER?
YES
NO
S113
DOES COMMUNICATION TASK REQUIRE EMPTY BLOCK?
NO
YES
S114
EXTRACT BLOCK NOT EMPTY FROM FIRST BUFFER AND WRITE TO HD
S115
RETURN EMPTY BLOCK TO FIRST BUFFER

FIG. 6

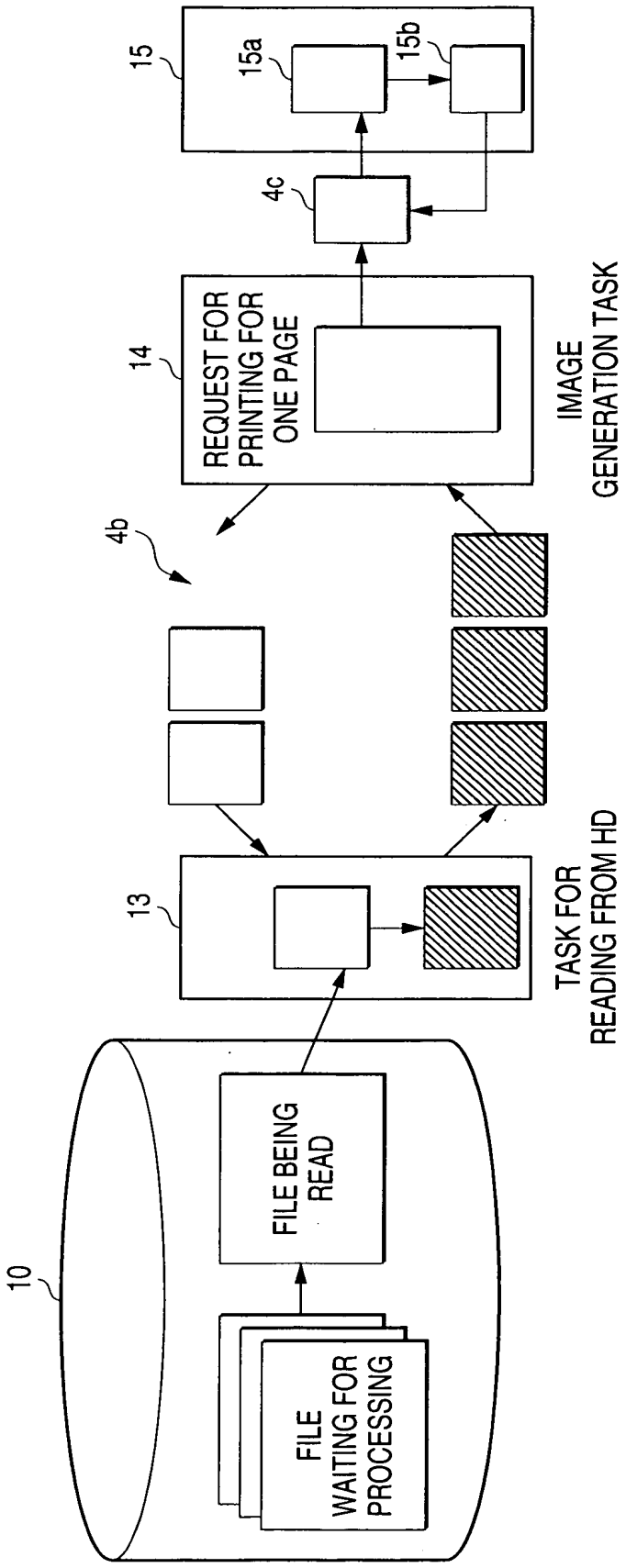
10
FILE WAITING FOR PROCESSING
FILE BEING READ
13
TASK FOR READING FROM HD
4b
14
REQUEST FOR PRINTING FOR ONE PAGE
IMAGE GENERATION TASK
4c
15
15a
15b

FIG. 7

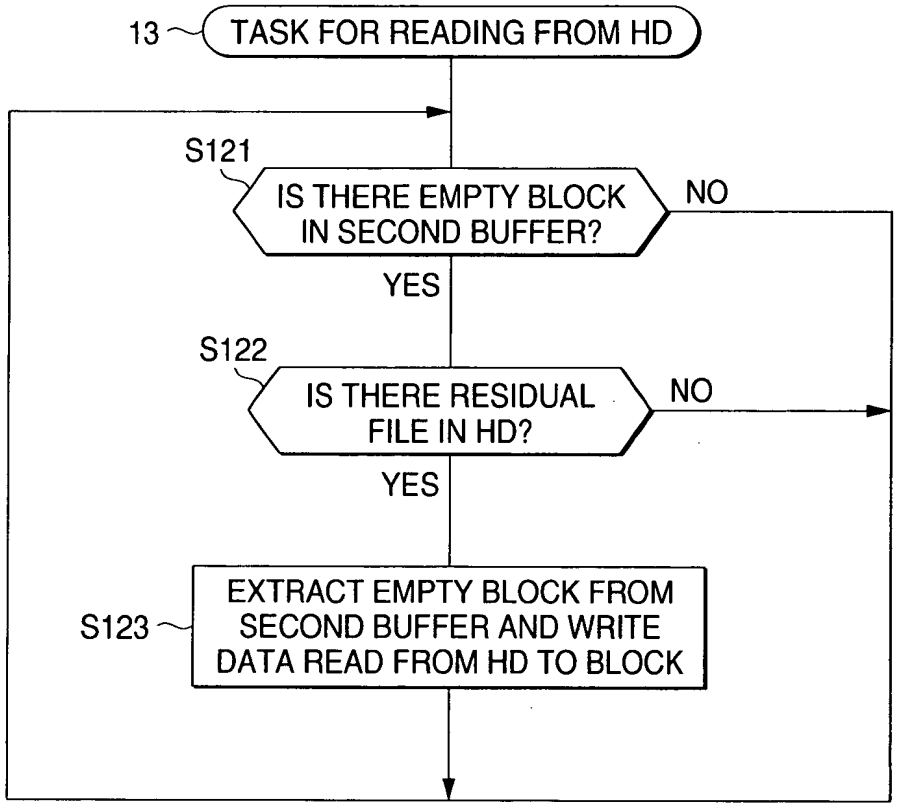
13
TASK FOR READING FROM HD
S121
IS THERE EMPTY BLOCK IN SECOND BUFFER?
NO
YES
S122
IS THERE RESIDUAL FILE IN HD?
NO
YES
S123
EXTRACT EMPTY BLOCK FROM SECOND BUFFER AND WRITE DATA READ FROM HD TO BLOCK

FIG. 8

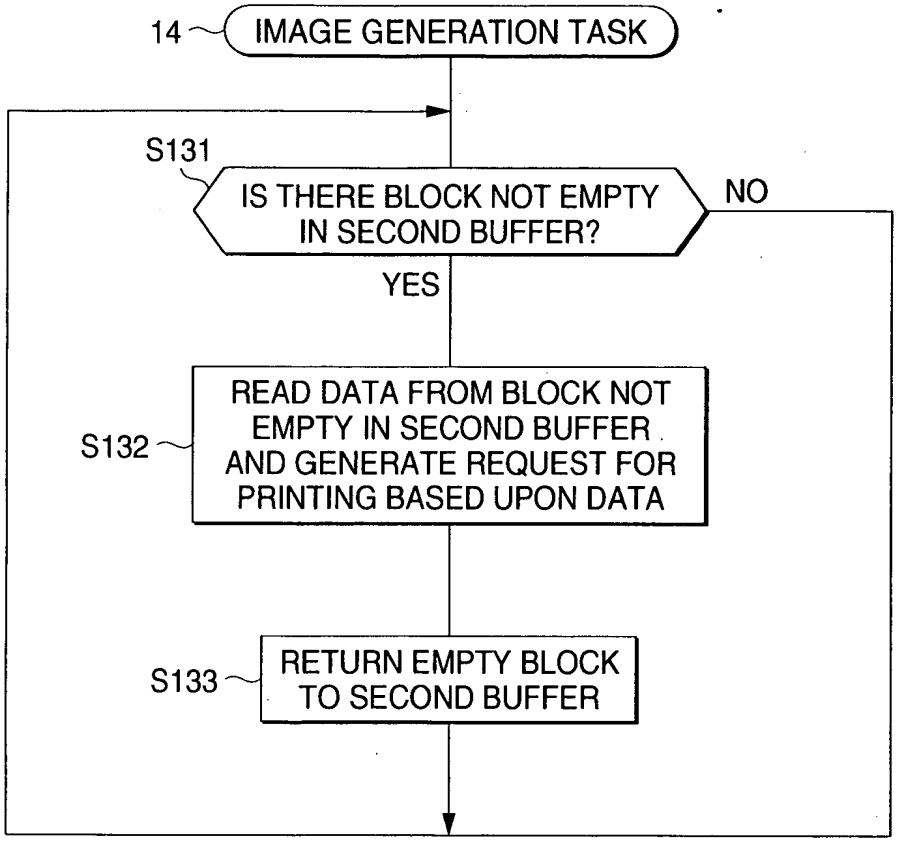
14
IMAGE GENERATION TASK
S131
IS THERE BLOCK NOT EMPTY IN SECOND BUFFER?
NO
YES
S132
READ DATA FROM BLOCK NOT EMPTY IN SECOND BUFFER AND GENERATE REQUEST FOR PRINTING BASED UPON DATA
S133
RETURN EMPTY BLOCK TO SECOND BUFFER

FIG. 9

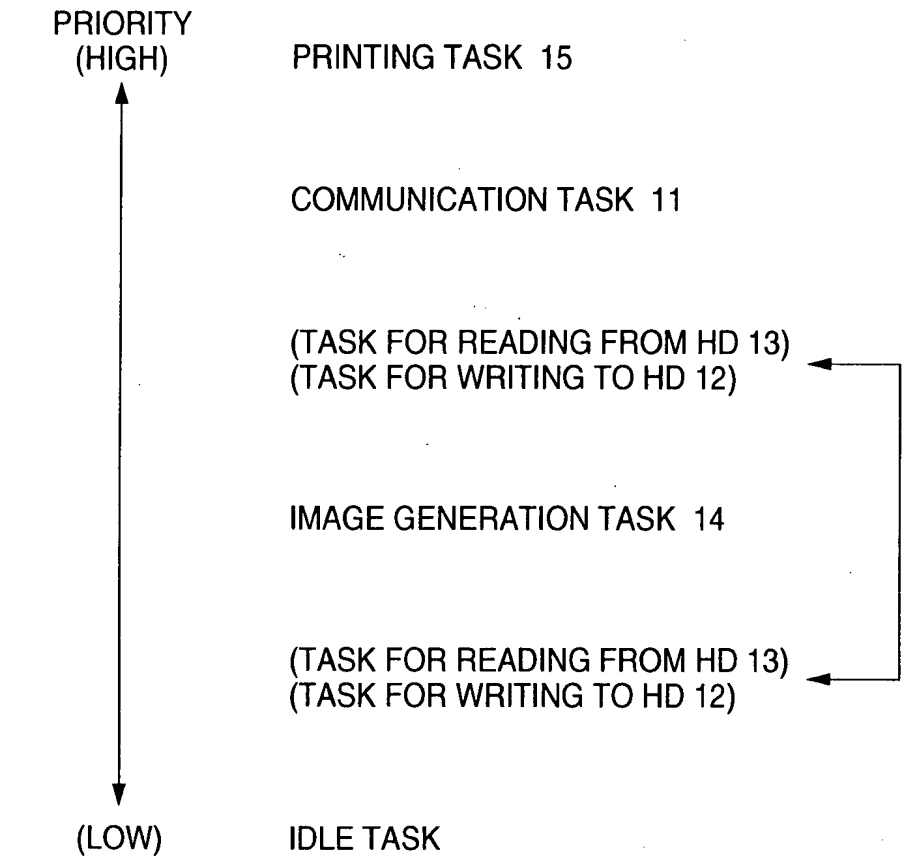
PRIORITY
(HIGH)
PRINTING TASK 15
COMMUNICATION TASK 11
(TASK FOR READING FROM HD 13)
(TASK FOR WRITING TO HD 12)
IMAGE GENERATION TASK 14
(TASK FOR READING FROM HD 13)
(TASK FOR WRITING TO HD 12)
(LOW)
IDLE TASK

FIG. 10

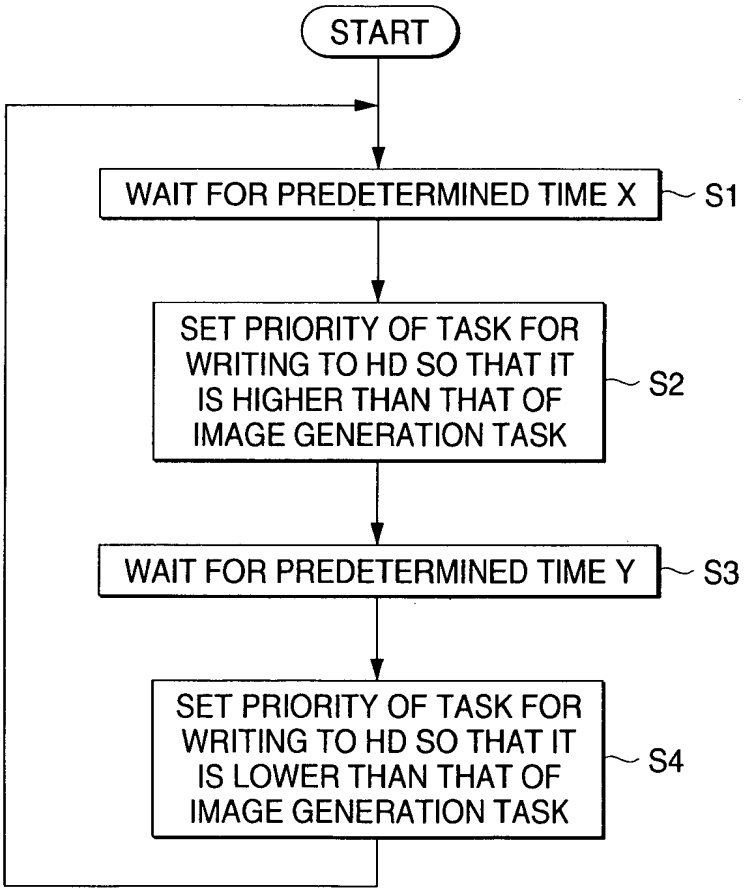
START
WAIT FOR PREDETERMINED TIME X
S1
SET PRIORITY OF TASK FOR WRITING TO HD SO THAT IT IS HIGHER THAN THAT OF IMAGE GENERATION TASK
S2
WAIT FOR PREDETERMINED TIME Y
S3
SET PRIORITY OF TASK FOR WRITING TO HD SO THAT IT IS LOWER THAN THAT OF IMAGE GENERATION TASK
S4

FIG. 11

TASK FOR WRITING TO HD \ IMAGE GENERATION TASK	EVENT OCCURS	NO EVENT OCCURS
EVENT OCCURS	A	B
NO EVENT OCCURS	C	D

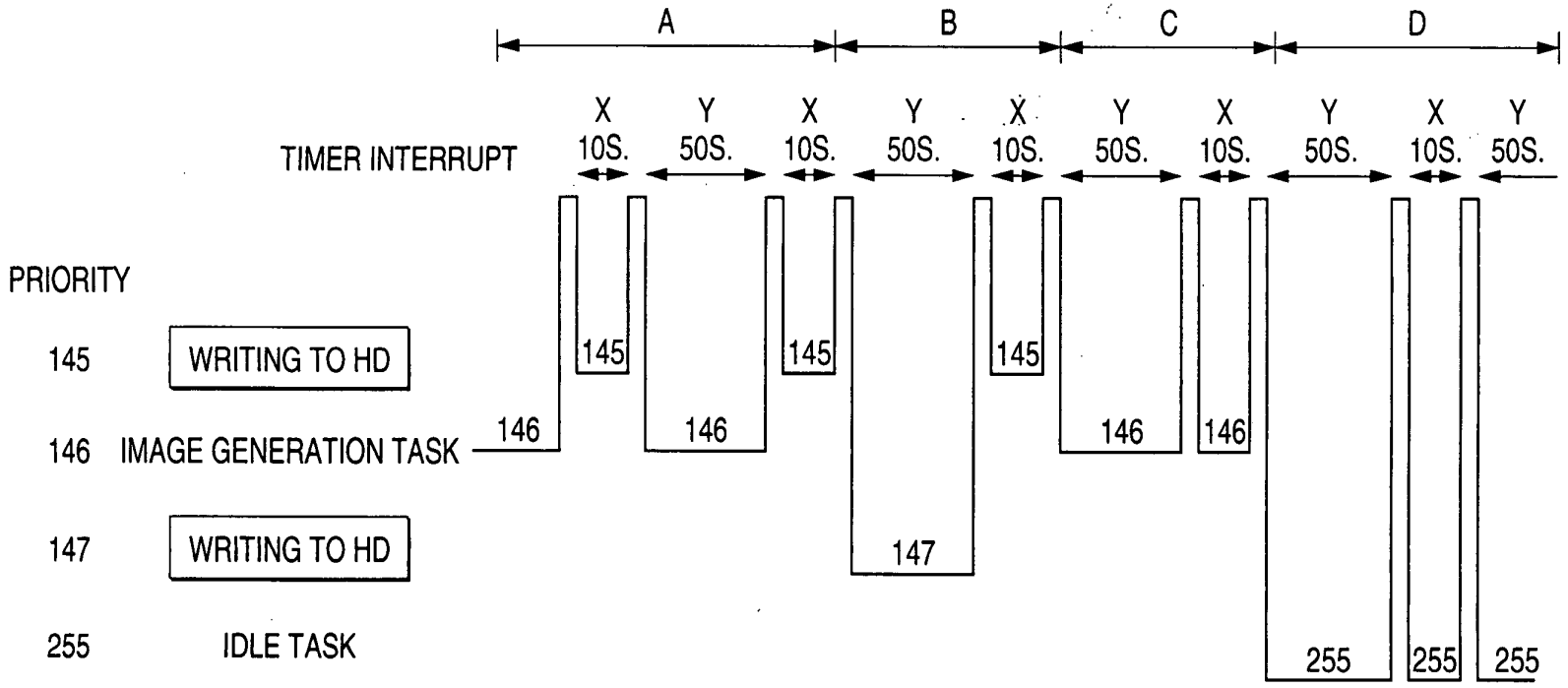

FIG. 12

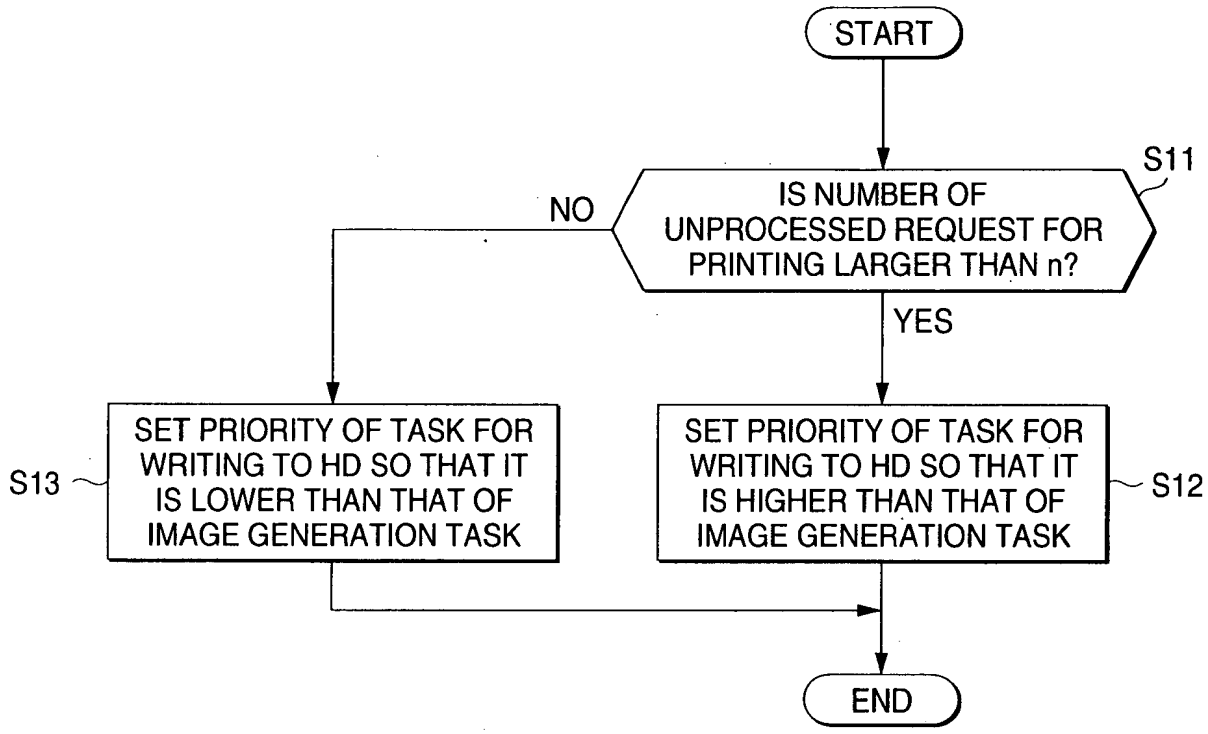
START
S11
IS NUMBER OF UNPROCESSED REQUEST FOR PRINTING LARGER THAN n?
NO
YES
S13
SET PRIORITY OF TASK FOR WRITING TO HD SO THAT IT IS LOWER THAN THAT OF IMAGE GENERATION TASK
SET PRIORITY OF TASK FOR WRITING TO HD SO THAT IT IS HIGHER THAN THAT OF IMAGE GENERATION TASK
S12
END

FIG. 13

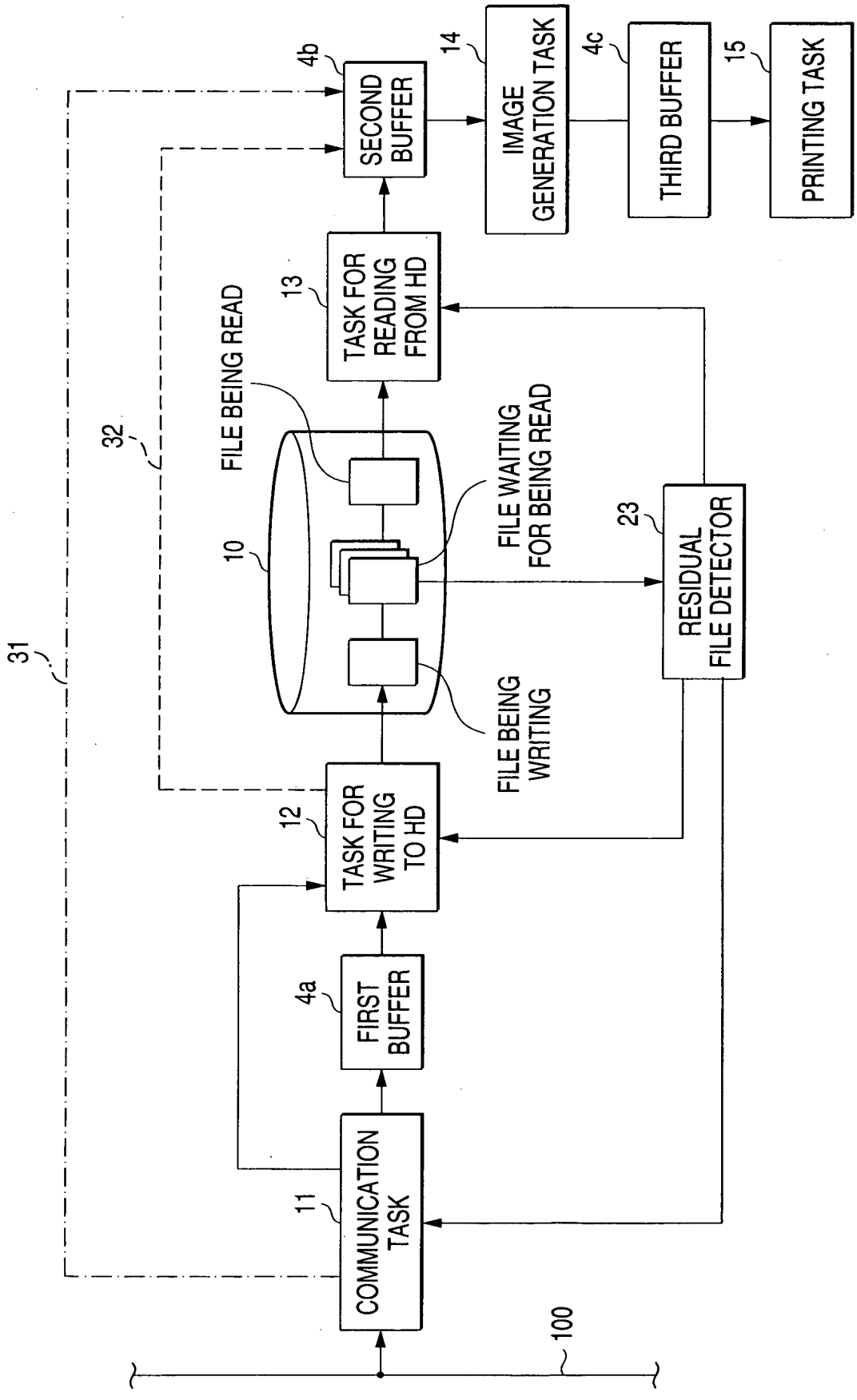
100
COMMUNICATION TASK
11
FIRST BUFFER
4a
TASK FOR WRITING TO HD
12
TASK FOR READING FROM HD
13
SECOND BUFFER
4b
IMAGE GENERATION TASK
14
THIRD BUFFER
4c
PRINTING TASK
15
RESIDUAL FILE DETECTOR
23
10
FILE BEING READ
FILE WAITING FOR BEING READ
FILE BEING WRITING
31
32

FIG. 14

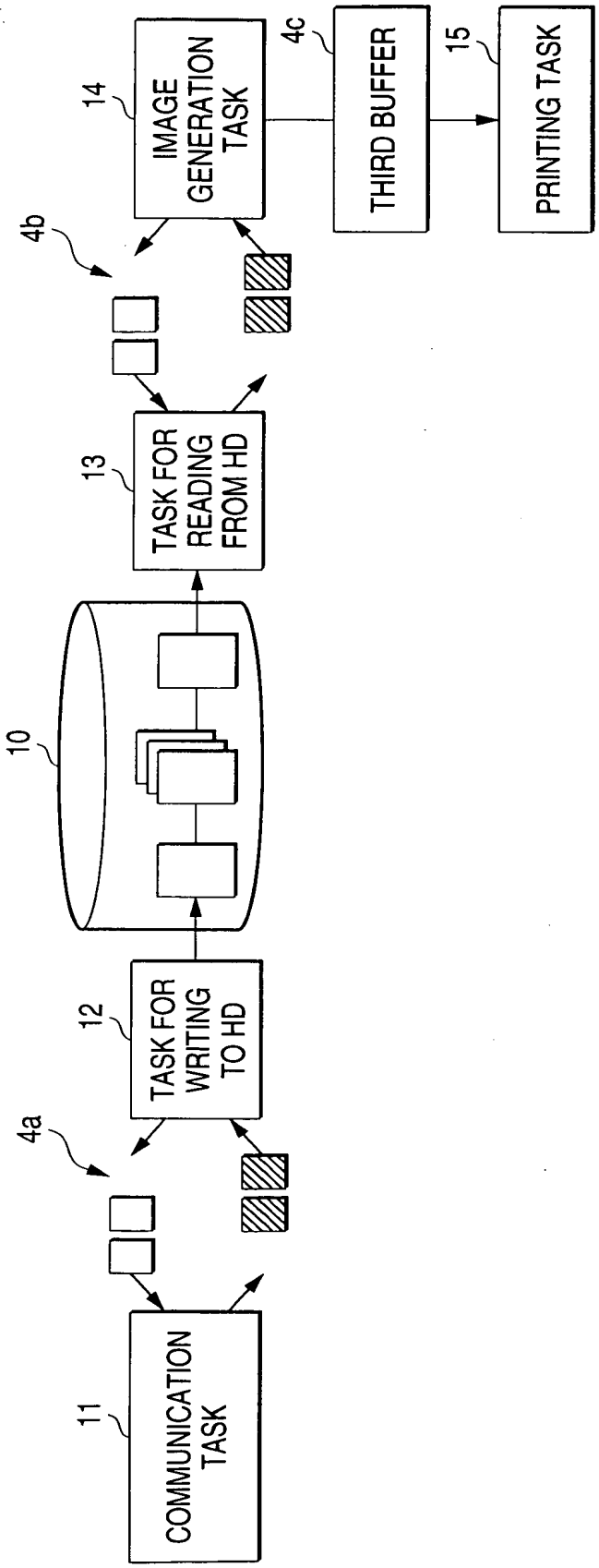
11
COMMUNICATION TASK
4a
12
TASK FOR WRITING TO HD
10
13
TASK FOR READING FROM HD
4b
14
IMAGE GENERATION TASK
4c
THIRD BUFFER
15
PRINTING TASK

FIG. 15

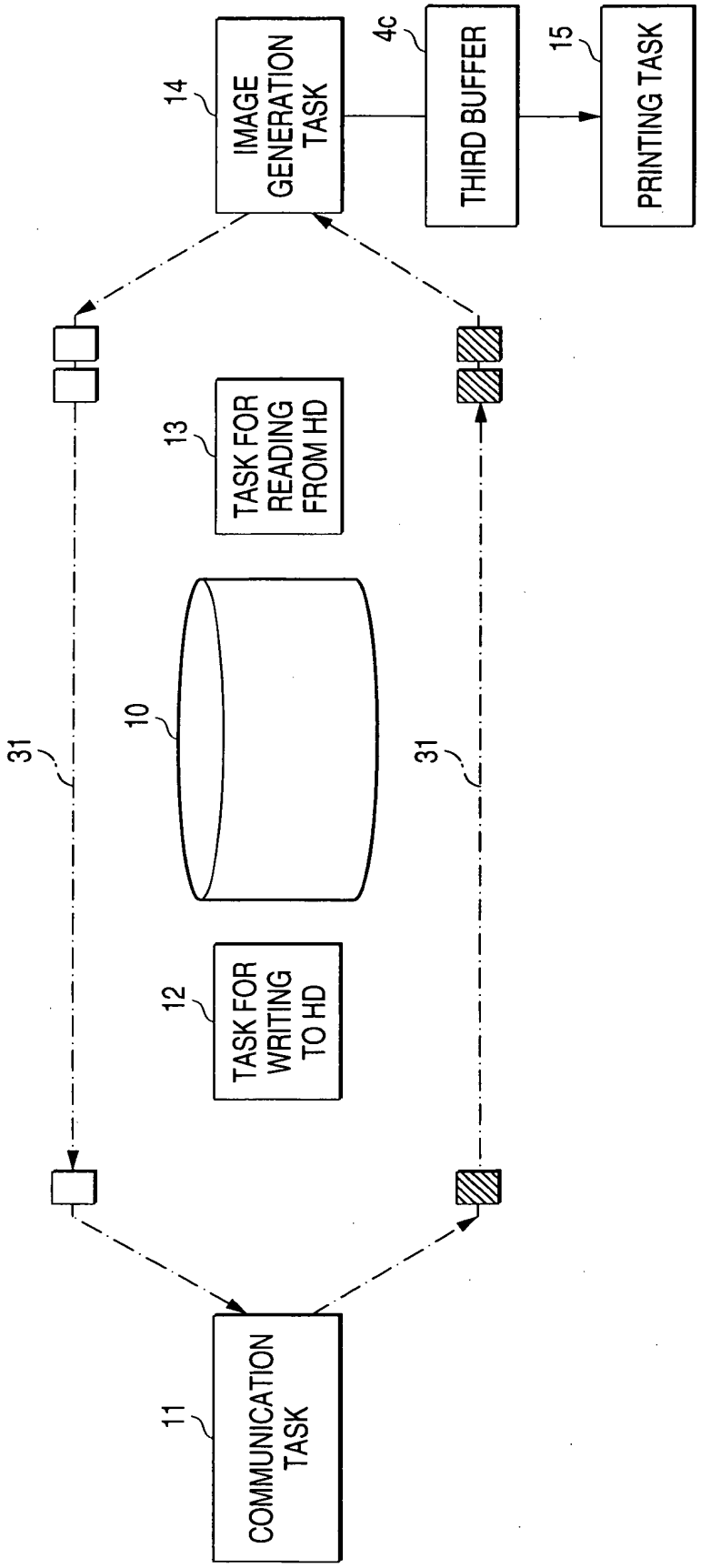
14
IMAGE GENERATION TASK
4c
THIRD BUFFER
15
PRINTING TASK
13
TASK FOR READING FROM HD
10
31
31
12
TASK FOR WRITING TO HD
11
COMMUNICATION TASK

FIG. 16

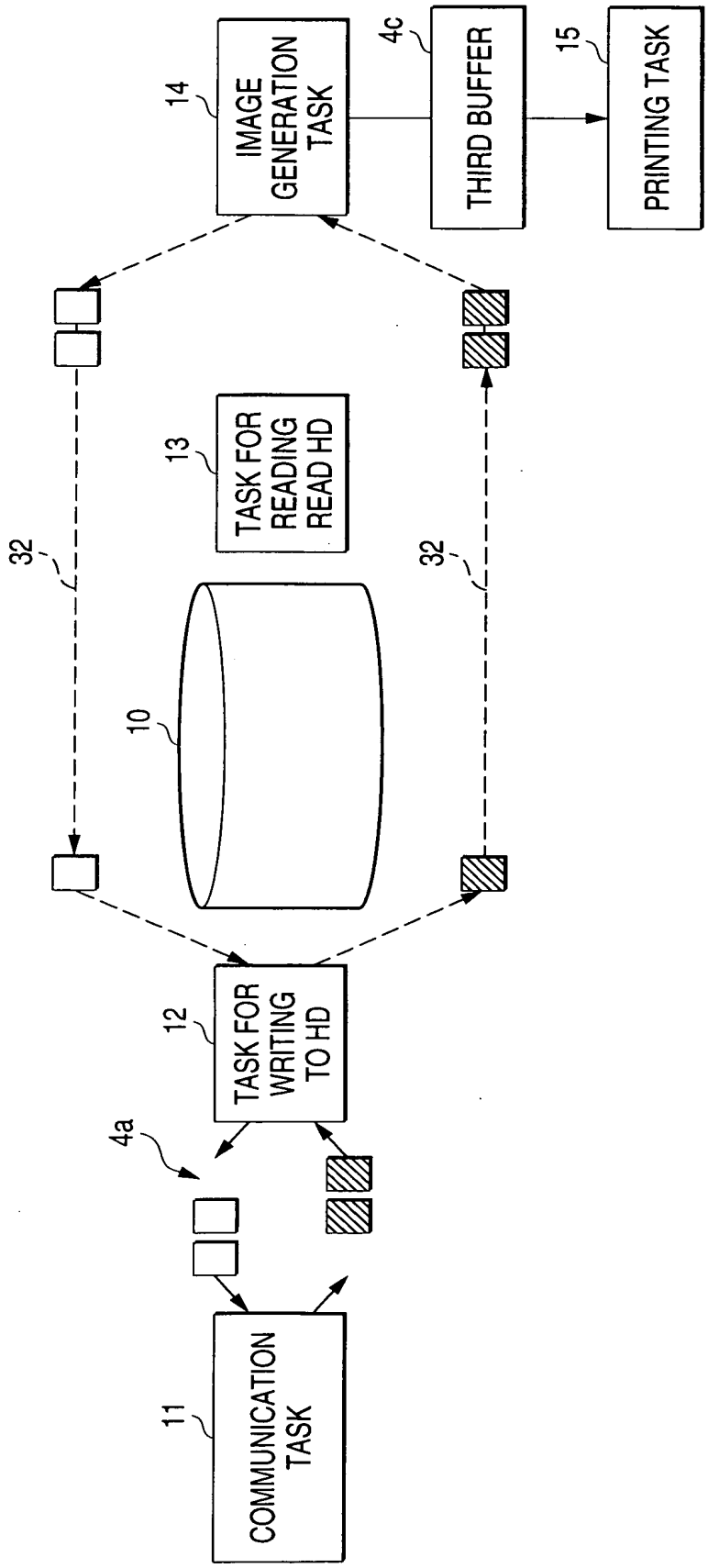
11
COMMUNICATION TASK
4a
12
TASK FOR WRITING TO HD
10
13
TASK FOR READING READ HD
32
32
14
IMAGE GENERATION TASK
4c
THIRD BUFFER
15
PRINTING TASK

FIG. 17A

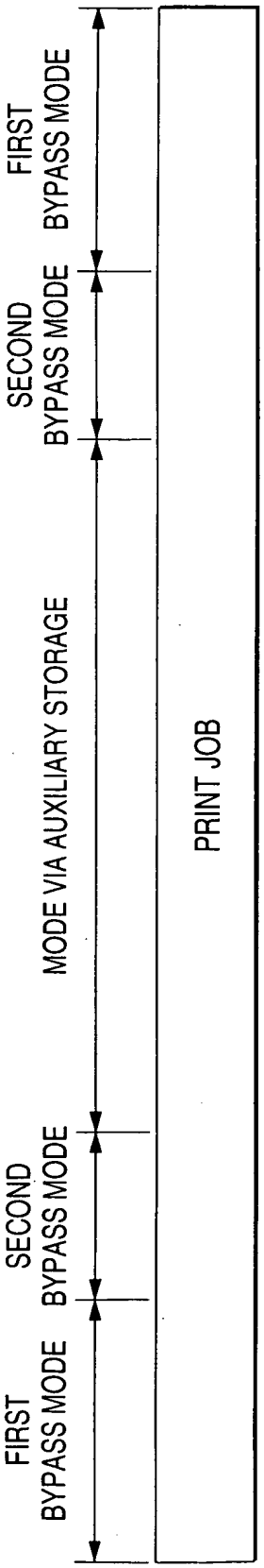
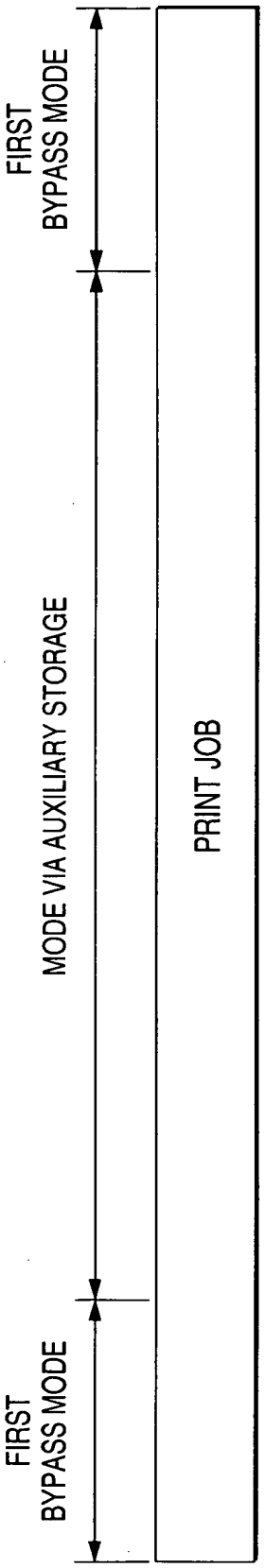
FIG. 17B